

## Pooled Transaction System

### Relationship to Other Application

This application claims the benefit of the filing date of United States Provisional Patent Application Serial Number 60/155,301, filed September 21, 1999

### 5 Background of the Invention

#### FIELD OF THE INVENTION

This invention relates generally to systems for conducting commercial transactions over a computerized network, and more particularly, to a system wherein buyers and or sellers are pooled to effect price reductions.

#### 10 DESCRIPTION OF THE RELATED ART

Conventional auction arrangements are generally directed toward increasing the price at which the auctioned goods are sold by causing the buyers to bid against each other. There is a need, however, for a system of conducting sales of products and services whereby buyers are aggregated and the consequently increased purchasing power is applied to reduce the price at which the products or services are sold. Thus, vendors compete for the larger sale.

15 There is additionally a need to engage in price determination based on actual manufacturers' suggested retail price ("MSRP") or actual prices at which such products or services are available from other vendors ("Street Prices"), and actual price trends and price break points. In situations, for example, where the number of aggregated buyers is too great for a single vendor, there is a need for a system of conducting sales of products and services whereby vendors are aggregated.

### 20 Summary of the Invention

The present invention provides in a method aspect thereof, a method of transacting sales over a computerized network. The present inventive method includes the steps of:

- 25 defining a first product desired to be purchased by a first purchaser;
- correlating in a first database record the first product and the first purchaser;
- further correlating in respective ones of a plurality of first database records the
- 30 first product and respective ones of a plurality of second purchasers;

issuing an offer to a vendor to purchase the first product at a first offer price in a quantity responsive to the plurality of first database records; and

consummating a transaction between the vendor and the first and second purchasers.

5        In one embodiment, prior to performing the step of issuing an offer there is further provided the step of calculating a first commitment price. The step of calculating a first commitment price is, in some embodiments, responsive to a rate of performing the step of further correlating. The first commitment price may be responsive to historical sales performance of the first product; a price trend of an article  
10      similar to the first article; or a price trend of the first article itself over a predetermined period of time.

15      In a further embodiment of the invention, there are further provided the steps of: defining a second product desired to be purchased by a first purchaser; and correlating in the second database record the second product and the first purchaser.

20      There is provided in other embodiments the step of further correlating in respective ones of a plurality of second database records the second product and respective ones of a plurality of third purchasers. There may further be provided the step of issuing a further offer to a vendor to purchase the second product at a second offer price in a quantity responsive to the plurality of second database records. A first consolidated report is issued in certain embodiments for presentation to the first purchaser in response to the first and second offer prices. The first consolidated report may include information from the first and second database records.

25      In accordance with a further method aspect of the invention, there is provided a method of transacting sales over a computerized network. This method aspect includes the steps of:

30      defining a first product desired to be purchased by a first purchaser; enabling the first purchaser to search a product database for a pre-existing database record associated with a product having a relationship to the first product acceptable to the first purchaser;

correlating in a first database record the first product and the first purchaser; further correlating in respective ones of a plurality of first database records the first product and respective ones of a plurality of second purchasers; and  
5 enabling a vendor of products having a predetermined similarity to the first product to search the product database.

In one embodiment, there is further provided the step of consummating a transaction between the vendor and at least some of the first and second purchasers. There may additionally be provided, prior to performing the step of consummating a transaction, the further step of consummating a transaction between at least one vendor  
10 for a quantity of the first product responsive to a predetermined portion of the total number of first database records. In other embodiments, there is provided the further step of consummating a transaction between at least one vendor for a quantity of the first product responsive to the total number of first database records.

In accordance with a still further method aspect of the present invention, there  
15 is provided a method of including a prospective purchaser in a pool in a computerized network transaction system. This further method aspect includes the steps of:

defining pool parameters responsive to a purchase desired to be made by the purchaser;  
20 active searching an active pools database for an active pool having a pool characteristic resembling the pool parameters;

active presenting a matching active pool discovered in response to the step of active searching to the prospective purchaser; and

active installing the prospective purchaser in the matching active pool in response to the step of active presenting.

25 In accordance with yet a further method aspect of the present invention, there is provided a method of including a prospective purchaser in a pool in a computerized network transaction system, the method comprising the steps of:

defining pool parameters responsive to a purchase desired to be made by the purchaser;

inactive searching an inactive pools database for an inactive pool having a pool characteristic resembling the pool parameters;

inactive presenting a first matching inactive pool discovered in response to the step of inactive searching; and

5 forming a new pool having new pool parameters similar to the first matching  
inactive pool.

In one embodiment of this further aspect of the invention, there is further provided the step of commitment price calculating a new pool commitment price. Additionally, there may be provided, in other embodiments, the further steps of:

10 obtaining a commitment by the purchaser to purchase a product defined by the  
new pool parameters at the new pool commitment price; and  
installing the purchaser in the new pool.

### Brief Description of the Drawing

15 Comprehension of the invention is facilitated by reading the following detailed description, in conjunction with the annexed drawing, in which:

Fig. 1 is a simplified function block representation of a specific illustrative embodiment of the invention wherein a purchaser is afforded an opportunity to enter one or more purchasers' pools;

20 Fig. 2 is a simplified function block representation of a specific illustrative embodiment of the administrative interface portion of the embodiment of Fig. 1;

Fig. 3 is a simplified function block representation of a specific illustrative pricing process;

Fig. 4 is a simplified function block representation of a specific illustrative process for determining whether to form a purchaser pool; and

25 Fig. 5 is a simplified function block representation of a specific illustrative embodiment of the invention wherein a vendor is afforded an opportunity to enter a vendors' pool or to cause formation of a new vendor pool.

### Detailed Description

30 Fig. 1 is a simplified function block representation of a specific illustrative embodiment of the invention wherein a registered purchaser 100 is afforded an

opportunity to enter one or more purchasers' pools, each such pool being directed to achieve increased purchasing power based on pooled quantities to be purchased, for a defined product type. For purposes of the present discussion, it is assumed that each purchaser has been registered, including receipt by the system administrator (not shown in this figure) of payment information, and there has been formed an enforceable purchase contract (offer and acceptance) between the purchaser and the system administrator, including mutual manifestations of intent to a determined set of terms, upon which, as will be described below, the system administrator reasonable can rely to issue purchase offers to, and enter into binding purchase commitments with, vendors.

As shown in this figure, registered purchaser 100 engages in a decision process by which he or she determines at decision block 101 the product(s) desired to be purchased. In making the decision, the registered purchaser can browse, using a display 110, one or more predefined product types that are stored in a database (not shown) in an administrative interface 120. Administrative interface 120 will be described in greater detail hereinbelow in connection with Fig. 2.

Display 110 in Fig. 1 presents, in this embodiment of the invention, data to registered purchaser 100 relating to preestablished on-going product or service pools that the registered purchaser can join if the product or service desired to be purchased by the searching registered purchaser is identical or acceptably similar to the products specified in the existing pools. The display can also make available to the registered purchaser the status of the pools, including pools in which the registered purchaser may participate, as well as the registered purchasers' history in prior pools and status in on-going pools.

At such time as the registered purchaser has determined to purchase an item, a decision is made at function block 102 whether the product desired to be purchased is available in an existing on-going pool or whether a new pool of purchasers needs to be started. If the desired product is not available in any existing pool, then the parameters that define the product desired to be purchased are defined at function block 112, and this information is submitted to administrative interface 120. As will be described below in connection with Fig. 2, a decision is made, with administrative authorization,

to start a new product pool. This procedure continues until all products desired to be purchased by registered purchaser 100 are determined to be the proper subject of an existing pool, or a pool that has been authorized by system administration (not shown in this figure) to be formed. Additionally, in situations where the registered user desires 5 to form an order comprised on multiple products, and the system administration determines that an adequate pool for one or more of such products in the order are not available in any existing pool and the formation of a pool on any such product is declined, then agreement is reached between the registered user and the system administration as to whether the registered user will place an order for the remaining 10 product(s).

At such time as it is determined that all pools necessary for fulfillment of the registered purchaser's order are in existence or are agreed to be formed, the decision process proceeds to decision block 103, and associated function blocks 113 and 115, where database records are created responsive to the registered purchaser's order. More 15 specifically, if it is determined that the order being placed by the registered purchaser can be accommodated in a single pool, then a single pool data record is created at function block 131. On the other hand, if the order spans several pools, then a multiple pool data record is formed at function block 115. As will be described below, the order placed by registered purchaser 100 is aggregated in appropriate pools with orders placed 20 by other registered purchasers (not shown) and these aggregated orders are made available by way of purchase offers or by database access to responsive vendors 140. The administrators in the administrative interface will register vendors in an appropriate database (not shown in this figure) and determine whether a vendor that bids on a pool or a portion of a pool can reasonably be expected to fulfil the orders. That is, the 25 bidding vendors are subjected to a prequalification and registration process.

At a predetermined time, the registered purchaser will enter into a contract whereby he or she is bound contractually to the order. Prior to that time, however, a change order request issued by the registered purchaser at function block 130 will be considered by the system administration in accordance with a mutually agreed policy. 30 Such policy will determine, for example, the procedures to be followed when a

registered user desires to change a multi-pool order, particularly when one or more of the relevant pools has proceeded to a commitment stage.

Fig. 2 is a simplified function block representation of a specific illustrative embodiment of administrative interface portion 120 of the embodiment of Fig. 1. As shown in Fig. 2, there are provided a plurality of databases, such as purchasers database 210, active pools database 216, and vendors database 246. All of these databases are monitored and controlled by a system administration that is generally designated 250. There is additionally provided a price data acquisition arrangement 226 that obtains pricing information from a variety of sources, including the internet. Such pricing information includes current retail prices, manufacturers suggested retail prices (MSRP), quantity/price breaks, wholesale prices, available odd lots, and their prices, *etc.* The pricing data obtained by prices data acquisition system 226 is stored in a current third party prices database 225. Historical prices are stored in product pricing/history memory 228. The old prices are useful to determine price trends and other market information that will enable the system administration to determine a commitment price.

Historical information is of value in enabling a pricing determination to be made at a pricing engine 222. Thus, for example, the history of prior pools that are now closed is stored in a prior pools memory 218. This information is useful to the system administration to determine whether the formation of a new pool (see, function block 112 in Fig. 1) has a likelihood of being successful. Similarly, pricing history information provided by vendors in vendors database 246 is stored in a vendors pricing history memory 242, and this information is useful in determining the likelihood of success of a new pool and enables the system administration to make a non-binding representation to registered purchaser 100 of the amount that he or she can expect to save. All of this historical pricing information from prior pool (218), prior vendor bids (242), prior market prices (248), *etc.* when compared to existing market prices (225), enable the system administration to compute reasonably reliable expectations of savings (214) that will attract the registered purchaser to place his or her order with this system. In addition, prices data acquisition system 226 may, in certain embodiments, be capable

of obtaining prices from on-line auction and other vendors that will enable presentation to the registered purchaser of the attractive historical performance of the present system.

In the practice of the invention, pools of aggregated purchaser orders are formed, the pools having varying operational characteristics. Some pools, for example, are created and have a finite pool life. The duration of the pool life is determined by pool and price cycle timer 240 which is controlled by system administration 250. Thus, any such pool will expire at a predetermined time, and its performance, as previously noted, is stored in prior pools memory 218. Other pools, however, are continuous in that a registered purchaser need not ever go through the process (102, 112) of causing creation 5 of such a pool. Such continuous or standing pools, however, are subject to time-related cycles controlled by timer 240 that determine the period of time that a registered purchaser is in such a standing pool. The change order request of function block 130 may, in some embodiments, be used to enable a registered purchaser to extend the effective pool cycle applicable to his or her order, in situations where such registered 10 purchaser believes prices will continue to fall and his or her need of the product is not immediate. Additionally, when the product to be purchased by the registered purchaser is a quantity of a commodity, the change order function can be employed in certain 15 embodiments to portions of the order. The correlation between active pools and purchasers, as well as change order requests for pool cycle extensions, is controlled at function block 212. Timer 240 additionally controls the duration of a price cycle that 20 will be used compute the expected savings at function block 214.

The pricing engine represented at function block 222 need not be entirely a computerized system. In some embodiments of the invention, human intervention is employed in the pricing process, illustratively under control of system administration 25 250.

Fig. 3 is a simplified function block representation of a specific illustrative pricing process. As shown in this figure, third party price information is received at function block 310. Such information may be received via the vendor and third party prices data acquisition system 226. The MSRP and the retail (or "street") price are 30 calculated at function block 312 and displayed at system administration 250. In some

embodiments, this information can be made available to registered purchaser 100 at display 110 in response to the computation of function block 214. This specific embodiment of the invention then continues by calculating a non-binding extrapolated low price based on data obtained from vendors pricing history 242 and including, in 5 some embodiments, third party price trends calculated by pricing engine 222 from information obtained from product pricing history memory 228 and current third party prices database 225 over a period of time determined by price cycle timer 240.

In this specific embodiment, those registered purchaser that are in a pool in a non-binding manner prior to the formulation of a first commitment price are termed 10 “early buyers.” An early buyers commitment price is calculated at function block 314 based on the extrapolated low price and a predetermined reserve for the system. The early buyers are then afforded an opportunity to remain in the pool by committing to purchase if the system can achieve a vendor offer that permits them to purchase at a purchase price that is at least as favorable as the early buyers commitment price. Such 15 a purchase price is displayed to the registered purchaser at function block 320, which display may require reintegration of a multiple pool order using the correlation between the active pools and the purchasers in function block 212. Thus, in this embodiment, a multiple pool order would be presented to the associated registered purchaser in an integrated fashion whereby the purchaser does not see the pricing for individual 20 components for his or her order. In some respects, therefore, the pooling system of the present invention is transparent to the purchasers, except insofar as they may optionally be provided access to individual pools as discussed hereinabove in connection with the decision-making process of Fig. 1. The system administration will formulate policy regarding the extent to which the pooling system and the pools are viewable by the 25 purchasers.

After the early purchasers have committed to purchase at the early buyers commitment price, as presented to them at function block 320, a purchase offer is calculated to vendors at function block 322. The offer price may be responsive, in certain embodiments, to the pool size (*i.e.*, number of early buyers), the third party price 30 breaks, the extrapolated low price, *etc.* The offer is conveyed to the vendors at node E,

which includes direct communication to vendors of requests for proposals, and direct access by vendors of database information. In this specific illustrative embodiment, active pool information can be made available to the vendors via pricing engine 222 and vendors database 246.

5 Following the offers to vendors, it is determined at decision block 325 whether  
there has been received an acceptable vendor offer. This decision may involve  
communication by the system administrators with targeted vendors, and possibly some  
negotiation that might involve raising the early buyers commitment price and obtaining  
revised commitments from the early buyers. If the system administrator determines that  
10 an acceptable vendor offer is not reasonably available, then the buyers are notified and  
the pool closed at function block 327. This may require recalculation or a revised  
commitment on the part of a registered purchaser that has placed an affected multiple  
pool order. However, if there is available an initial acceptable vendor offer, then a  
commitment price is calculated for purchasers who enter the pool after the commitment  
15 by the early buyers, such subsequent buyers being termed the “late buyers.”

A commitment price is calculated for the late buyers and an early buyers price advantage at function block 330. The commitment price and the early buyers price advantage may, for example, be responsive to price reductions resulting from increased pool size. The late buyers' commitments are then obtained at the calculated late buyer commitment target price, and the early buyers are notified, in this embodiment, of a calculated early buyer price advantage. Such an advantage would stimulate early commitment and consequently produce in future pools a larger number of early buyers. Moreover, the number of early buyers might be increased in certain embodiments by conducting effective pool marketing on the part of the system administrator using information from prior pools memory 218, purchasers database 210, product pricing history memory 228, and current third party prices database 225.

Notwithstanding that some late buyers have committed to the late buyers commitment target price at function block 332, in a highly successful pool, additional late buyers will enter, thereby increasing the pool size. Such pool size increase, coupled to trends that may be evident from the current third party prices database (225) enables

continued negotiations with vendors at function block 334 until the pool or the pool cycle times out by operation of pool and price cycle timer 240. Upon expiration of the pool or pool cycle, the final prices are calculated at function block 336 and the pool or pool cycle is closed. The buyers and vendors are then notified at function block 340 and a check-out process is conducted. With respect to purchasers that have placed orders that span multiple pools, such pools are integrated at function block 342 in correlation with the associated purchasers (function block 212). Such purchasers of multi-pool orders are notified and checked-out at function block 340.

Fig. 4 is a simplified block representation of a specific illustrative process for determining whether to form a purchaser pool. As shown, pool parameters from a registered purchaser are received at function block 410. Such parameters correspond to the information defined at function block 112 of Fig. 1. In Fig. 4, once the pool parameters are obtained a search is conducted at function block 412 to identify the closest matching pool in active pools database 216. Information relating to the closest matching pool is presented to registered purchaser 100 and the acceptability of the closest matching pool to the purchaser is determined at decision function block 414. If the purchaser accepts to be included in the presented closest matching active pool, the purchaser is installed therein at function block 416. On the other hand, if the purchaser deems the closest matching active pool to be unacceptable, a search is conducted, in some embodiments of the invention, of prior pools in prior pools memory 218 for the closest matching prior pool. If such a prior pool is acceptable to the purchaser, system administration 250 can determine at function block 427 to form a new active pool using the parameters of the acceptable prior pool, the decision being based in part on the historical performance of such a pool. Such a new pool, therefore, is formed under a first criteria that incorporates known historical performance of a same or similar pool. Upon the formation of the new pool, the pricing process is performed at function 429. In one embodiment, the pricing process will follow the procedure described in connection with Fig. 3.

In the event that the purchaser determines that the closest matching prior pool presented at function block 418 is unacceptable, the decision process proceeds to

decision function block 420 wherein the administration determines whether to form a new pool under a second criteria, *i.e.*, without the benefit of a known history. If the administrative judgment is such that the formation of a new pool without history is declined, the purchaser is notified at function block 422. On the other hand, if the administration determines to form a new pool, such is formed at function block 431, and, the pricing process of function block 429 is performed. In all likelihood, the formation of a new pool under the second criteria will require administrative monitoring, such as at function block 435.

Fig. 5 is a simplified function block representation of a specific illustrative embodiment of the invention wherein a vendor is afforded an opportunity to enter a vendors pool or to cause formation of a new vendor pool. As shown in this figure, a vendor that has a product for sale, particularly in quantity, delivers at function block 510 parameters that define a vendor pool (product for sale) having certain product parameters associated therewith. These include, for example, identification of the product type, quantity available, and pricing information, including price breaks. At function block 512, a pre-existing vendor pools database (not shown) is searched to identify similar vendor pools, whereupon the vendor is afforded an opportunity at decision block 514 to join a pre-existing vendor pool. Such may be desirable to a vendor in situations where the product being offered for sale is generally purchased by vendors on a scale larger than the offering vendor's available inventory. The similar vendor pool is then disclosed to the offering vendor at function block 516, and the offering vendor is offered an opportunity to join the pre-existing vendor pool at function block 518.

If the vendor agrees to join such a pre-existing vendor pool, the offering vendor is installed therein at function block 522. On the other hand, if the offering vendor prefers to form a one-product one-vendor pool, such is formed at function block 520. The new pool is correlated in the vendors database at function block 524. Additionally, a corresponding purchaser pool is formed at function block 526 which can be joined as previously described by purchasers desiring to purchase all or some of the product of the offering vendor.

Although the invention has been described in terms of specific embodiments and applications, persons skilled in the art can, in light of this teaching, generate additional embodiments without exceeding the scope or departing from the spirit of the invention described herein. Accordingly, it is to be understood that the drawing and description in this disclosure are proffered to facilitate comprehension of the invention, and should not be construed to limit the scope thereof.